

Application of: **COOK, Colin N.B. et al.**
Application S.N.: 10/792,285
Attorney Docket No.: 2540-0703

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows (red line changes to the specification in accordance with CFR 1.121 are indicated in the Remarks section):

1. After Paragraph [0014], insert the following new paragraph:

“[0015] Figs. 5 and 6 illustrate a loop-back cable embodiment.”

2. Replace paragraph [0025] with the following new paragraph:

“[0025] In another embodiment of the present invention illustrated in Figure 4, the devices in the VPA, including the VPS video subsystem 400 and VPC video subsystem 420 can be characterized by their data flow requirements. For example, the video logic system 306 on the VPS captures video frames at step 402, does delta analysis at steps 412 and 414 to compare current frame data 404 to that of an earlier frame 406, and encodes the stream at step 416. The encoded video is sent by message delivery in step 418 to the VPC for the VPC to decode at step 422 and display at step 428. In the VPS, the encoder step 416 can be preceded by monochrome detection 408 and mapping 410. In the VPC, the video decoding step can be succeeded by smoothing at step 424 and loading into frame buffer 426. This does not require any return information in accordance with an embodiment of the present invention. Similarly, the mouse and keyboard subsystems may simply transmit the stream from their corresponding devices on the VPC 305 for transmission to the VPS 304. On the other hand, special devices such as a USB may require bi-directional transfer, which are treated as independent directional flows by the architecture.”

3. Replace paragraphs [0029]-[0033] with the following new paragraphs:

“[0029] Figs. 5 and 6 illustrate an exemplary block diagram of a VPS 602 inside a host computer 601 with external loop back cables 501-504 in accordance with an embodiment of the present invention. As discussed herein, implementations of the VPA may be done with various configurations of hardware and software. The loop back configuration of Figure 5 is envisioned to provide several advantages.

[0030] Therefore, the loop back configuration described here puts the PCI card 500 functions on an FPGA, which may be used to implement the logic in hardware. Then, a cable 501 is connected into the PCI card functions from the internal video graphics card. This effectively puts the PCI card 500 into the host computer 601, but it does not affect the way that the host CPU is running. Therefore, the PCI card 500 uses a slot and power from the host computer 601, but does not affect its performance or functioning in any way. However, this placement allows the PCI card to capture the video signals coming from the host computer and relay them across the network. Additionally, the PCI card has the functionality to receive keyboard 607 and mouse 605 strokes and relay them to the keyboard and mouse ports on the host.

[0031] Additionally, in the loop back configuration of Figure 5 and 6, there are no video, keyboard or mouse drivers attached to the host from the VPS. Also, there is no impact on the host except for power, ground and slot consumption (e.g., a PCI slot). Further, no platform certification issues exist because it does not interact with the PC bus. Therefore, the VPA will function with any commercially available personal computer. Moreover, this system is relatively simple to install and there is no impact on the local operator of the Host.

[0032] As shown in Figure 6, the Host 601 is in communication with Virtual Presence Server (VPS) 602. VPS 602 receives keyboard 348 inputs, mouse 350 inputs and other device 352 inputs via IP network 603. The VPS 602 receives these signals through their previously described respective subsystems, and sends them to Host 601. It should be noted that there is not a virtual presence client (VPC) pictured in Figure 6 because it is embodied entirely in software on the remote computer or terminal emulator. Once inside Host 601, the signals are executed internally. Host 601 then outputs video and other device signals, which are transmitted to video display 346 and other device 352 by VPS 602 over IP network 603 for execution on those devices. The VPS may also have a local keyboard 607, mouse 605, other device 606 and display 604.

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[0033] In an embodiment of the present invention, a PCI card 500 may be utilized as VPS 602. The PCI card would use only the power and ground for the PCI card slot on the host computer 601. The PCI card has a connector that accepts the video, keyboard and mouse data of the client computer and provides connections 502-504 for the corresponding devices to be connected and looped through to the host. In addition, it has an external power connection so that the VPS on the card can monitor power status of the host.”